MANAGING NATIVE AND NATURALIZED AREAS

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"naturalize – to adapt (a plant or animal) to an environment not native; acclimate[1]"

When printed in 1966, the editors of Webster's New World Dictionary of the American Language probably didn't realize they would be describing an action (or more precisely, a non-action) taken by many 1990s Midwestern golf course superintendents. Stopping management in far-roughs allows the existing vegetation to become **naturalized**. This has become a relatively common occurrence on many older Illinois golf courses. Moreover, unmowed, out-of-play areas are also planned into many newer courses.

Naturalizing is different than prairie or meadow restoration. Naturalizing employs the existing vegetation and sometimes includes interplanting native species. In the prairie or meadow restoration process, native grasses, sedges, and forbs (herbaceous flowering plants such as coneflowers, asters, and goldenrods) are planted in a manner that attempts to recreate what may have been on the site years before. Prairie restoration is also taking place on some golf courses, but the process is quite different than naturalizing.

Herein, I will share observations and thoughts about what I've seen at many of the courses visited over the past seven or eight years. When dealing with this subject there are many ways to reach a satisfactory conclusion. Keep in mind that this has been written from a Midwest perspective; here naturalized areas are comprised primarily of cool season grasses. In other parts of the country, different grasses obviously exist and normally require different management schemes.

BENEFITS AND RISKS OF NATIVE AND NATURALIZED AREAS

Superintendents often see benefits of taking areas out of mowing. Certainly, reduced maintenance (labor, equipment, fertilizers, pesticides, ...) is a primary benefit. Mowing a naturalized area once or twice a year or burning native grasslands every other year can result in budgetary savings, both for labor and equipment. Moreover, fertilizers, insecticides, and fungicides are rarely, if ever, applied to these areas. There can also be environmental savings; normally less pesticide is applied to these settings and less fossil fuel is expended as mowing is reduced.

Naturalized and native areas often have improved wildlife habitat compared to mowed rough areas. In Illinois, particularly in the Chicago region, interest in the Audubon Cooperative Sanctuary program is great. In unmowed areas, taller plants provide food, shelter, and protection

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[1] _____. 1966. Webster's New World Dictionary of the American Language. The World Publishing Company, Cleveland and New York.

for birds, mammals, and the assorted insects, amphibians, and reptiles that inhabit these areas. These areas assist superintendents in developing a Certified Sanctuary.

A final benefit occurs as the native and natural areas enhance the golfing experience. These areas may be used to separate fairways or as hazards. Golf course conditions, and the resulting play, are improved and often made more interesting. Moreover, in some naturalized areas, appearance is improved by planting flowering forbs and grasses. Increasing plant diversity in these areas not only creates pleasing aesthetics, but also improves wildlife diversity. Thus, naturalizing areas on many golf courses can reduce management expenses and enhance the overall golfing experience by improving playing conditions, creating attractive plantings, and increasing wildlife diversity.

There are also obvious risks associated by having native and naturalized areas on a course. When completely unmanaged, these areas might become unattractive, weedy messes. Golfers accustomed to "wall-to-wall" manicuring may find these areas unappealing or undesirable. The presence of weeds in naturalized areas or invading native areas often leads to applications of chemical weed control or labor to mechanically cut or remove populations of undesirable plants. Controlling weeds usually requires labor and chemical-control inputs.

Increased wildlife on golf courses can also be a negative issue related to naturalized areas. Increased populations of deer and rabbits may lead to turf and landscape plant damage, both on the course and on surrounding areas. Increased populations of nuisance insects such as mosquitoes or yellow jackets may also result in undesirable attacks on golfers or residents in adjacent areas.

Many courses do not have room to create naturalized areas. Haphazardly placing unmowed areas where inadequate space exists or too close to in-play areas can both inadvertently increase difficulty and slow play as golfers search for errant shots. Slow play is a major concern and obviously detracts from the golfing experience.

Finally, the original design of some courses may be bastardized by inappropriately including natural areas where they don't belong. While the naturalizing trend can be implemented in many settings, not all courses will benefit from it. A case in point – in 1997, a novice Green Committee Chairman requested that I suggest grasses for developing natural areas to create a "links" look at his course. Upon visiting the course, it became apparent that this great old private club, had little space to devote to grassy, naturalized areas, and, moreover, had fairways lined with trees nearly a century old. This layout was not the place for natural, grassy area additions; the course's entire feel and flavor would probably have been ruined. In our last conversation, I encouraged the young committee chair to consult with his club's architect so that his thoughts could be properly implemented. To date, natural, grassy areas have not been developed.

OBSERVATIONS

At many golf courses, superintendents stop mowing out-of-play areas and allow the existing vegetation to grow. Often, a variety of cool season grasses are present and often include

combinations of creeping bentgrass, annual bluegrass, Kentucky bluegrass, tall- and fine-leaf fescues, Timothy, orchardgrass, and smooth brome. Different grasses usually exist in different settings. For example, orchardgrass, smooth brome, creeping bentgrass, and fine fescues may dominate in lightly shaded areas because of their tolerance to reduced light. Creeping bentgrass, Kentucky bluegrass, tall fescue, and Timothy can often be found in sunny areas.

Often, foxtails and other grassy weeds are also present. Among these grasses, the occasional broadleaved weeds also appear. Dandelions, buckhorn plantain, Canada thistle, chicory, and wild carrot often emerge along with white and yellow sweet clovers.

Some superintendents mow naturalized areas once or twice a year to clean up areas, reduce weed and woody plant invasion, and stimulate grass regrowth. Mowing in mid-to-late spring can reduce cool season grass seedheads. Late summer or early autumn mowing will clean up naturalized plantings and encourage cool season grass regrowth.

Mowing once or twice a year can result in a large amount of clippings. Rotary mowers are desirable; clippings are, at least somewhat, chopped which can reduce the smothering effects of long clippings. Sickle-bar mowers, on the other hand, can leave long clippings that can smother the planting. Following mowing, remove long clippings if it appears the existing grasses will be unable to regrow through the cut vegetation.

Periodic burning is desirable in natural areas or prairies dominated by warm season grasses and forbs. In naturalized areas where cool season grasses are the main species, fires are unwelcome; finding a time when grasses are dry enough to burn can be difficult. In addition, fires may damage or kill the cool season grasses growing on the site.

Weeds can be a major problem, whether managing a prairie restoration or naturalized areas comprised of cool season grasses. Woody plants such as cottonwood and willows, herbaceous broadleaved plants such as white sweet clover and Canada thistle, and grasses such as giant foxtail can all be troublesome. Both mechanical and chemical methods are used to control these unwanted invaders.

Mechanical weed control methods such as hand pulling, cutting back, or burning can be effective against some woody and herbaceous weed species. For woody plants, it is often important to combine mechanical methods with herbicides to achieve complete eradication. It is also important to mechanically control species at the proper point in their life cycle. Some weedy species, such as yellow and white sweet clover, are best cut back to the ground just prior to flowering. Others, like Canada thistle, should be cut during flowering. An interesting discussion of mechanical weed controls can be found in Chapter 16 of *The Tallgrass Restoration Handbook* [2].

Herbicides are also used to control weeds in naturalized areas. Specific formulations of herbicides such as 2,4-D, dicamba, and triclopyr are labeled to control broadleaf weeds in these

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[2] Solecki, M.K. 1997. Controlling invasive plants. Pages 251-278. *In*, The Tallgrass Restoration Handbook. *Edited* by S. Packard and C.F. Mutel. Island Press, Washington, D.C.

settings. Whenever dealing with any pesticides, be sure to read, understand, and follow all label instructions for the safest and most effective control. Chapter 16 of *The Tallgrass Restoration Handbook* presents a useful discussion of weed control using labeled herbicides. If weedy, woody species are a problem in wooded areas of your course, see *Herbicides Commonly Used for Controlling Undesirable Trees, Shrubs, and Vines in Your Woodland* [3].

PLAN THE ATTACK

If you think you are interested in naturalizing areas on your course, there are some questions you should ask before starting the process. Thinking through the process can solve many problems before they arise.

1. Are naturalized areas appropriate for my course? Will my course layout be negatively affected by naturalizing? Be honest in your appraisal.

2. What are your objectives of naturalizing areas? Determine what you want to accomplish by not mowing an area. Are you trying to just reduce maintenance or do you want to enhance the appearance of a previously mowed area? Are you trying to separate fairways? Think about the "look" that you want to achieve when creating your objectives.

3. Will naturalized areas slow play? If an area goes unmowed, will golfers likely hit into there? Uncut areas can really slow play if too many errant shots end up there.

4. Should I enhance the area or live with what's there? How much plant diversity do I want in these areas? Am I trying to recreate a meadow or prairie or am I willing to live with only cool season grasses in these areas? Do you want to bring in flowering plants and warm season prairie grasses to enhance the area's appearance? If so, what time of year do you really want the area to be attractive? Will seed or plugs be used?

5. How is the area going to be managed? How often will you mow? Can you tolerate weed invasions? How will you treat weeds? What is your overall management plan? Is burning an option, practically and legally?

After you've answered these questions and you still want to create some naturalized areas, there are several methods you can employ.

METHODS OF DEVELOPING NATURALIZED AREAS

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[3]Heiligmann, R.B. 1997. Herbicides commonly used for controlling undesirable trees, shrubs, and vines in your woodland. The Ohio State University, School of Natural Resources. Fact Sheet F-45, Supplement-97.

Before diving head long into naturalizing areas on your course, run through the questions asked earlier and develop a plan. Decide which of the three following options will be used to guide your planning.

Least Management Option

In this option, and in the other options, areas to become naturalized are carefully chosen so play is not interrupted. Most normal management activities cease, allowing natural processes to go unchecked. Mowing in the spring before plants go to seed, or in autumn before the onset of active growth, and collecting the resulting clippings, is the only management. The major benefit to this naturalizing option is the overall labor and chemical savings. These savings can be both financial and environmental.

Conversely, this management option can, over time, result in serious weed invasion, particularly in summers when cool season grasses are likely to go dormant. Aesthetically, this option suffers due to lack of attractive plants in the mix, as well as because of the presence of unattractive weeds.

Modest Management Option

After selecting the area to become naturalized, allow the existing vegetation to develop, mowing once or twice per year is still part of the management plan. The difference between this and the *Least Management Option* is use of selective pre- and post-emergence selective herbicides for controlling weeds. For example, should chicory invade the area, any of a large group of postemergence broadleaf herbicides can be applied. Similarly, if green foxtail becomes a problem weed, there are several selective preemergence herbicides available for control. In areas comprised of cool season grasses, either broadcast applications over the entire area, or spot treatments (with post emergence products) of specific weeds can be made.

This option combines the savings resulting from infrequent mowing with an improved appearance; offending weeds are reduced or eliminated. Still, this option suffers from a lack of colorful, attractive broadleaf plants.

Enhanced Management Option

In this option, the naturalized area is again selected so that it will not disrupt play. Mowing once or twice per year and collecting the clippings is also part of this option. Management decisions will vary at this point in the process.

The goals of the *Enhanced Management Option* are to create a naturalized area in which: (1) attractive grasses and flowering plants are incorporated, and (2) weeds are controlled. Each of the goals can be independently accomplished; the trick is to satisfy both in the same area.

Attractive grasses and flowering plants can be incorporated into naturalized grassy areas using seeds or plants and are best planted into island beds; planting forbs and grasses by seeding

into established grasses is usually not successful. Established grasses often out-compete seedlings or small potted plants.

Island beds can be scattered throughout the naturalized area. Identify spots where increased color and plant diversity may enhance the appearance of the hole. Concentrating mixed plantings into island beds allows weeds to be easily and selectively controlled in the cool season grass portions of the planting without damaging the plants in the island. Scattering seeds or plants throughout the entire area limits your weed control options later.

To create island beds, identify beds in the naturalized area using turf paint. Apply glyphosate to the island areas when the cool season grasses are actively growing (usually spring or early summer), and mow these herbicide-treated areas. Some of the grasses in the area may require a second application of glyphosate for complete kill. If seeding forbs and grasses into the killed area, scratch the surface lightly with a vertical mower or similar piece of equipment so that the seed can come into contact with the soil. Rotary tilling is not advised, however. Tilling can bring weed seeds to the surface and enable germinating weed to compete with germinating ornamental plants.

Select seeds of plants adapted to your planting site and geographic region. Select plants to provide season-long color. Using plants of variable heights can lead to a rough, unkempt appearance; select plants of a relatively constant height. If grasses are included in the mix, be sure they are only a small component. I have had golfers relate to me that areas of all tall grasses look like weeds, while the addition of a large percentage of colorful forbs creates a wildflower planting. Be aware that seeds of attractive perennial grasses and or flowering broadleaved plants can take two, and often more, years before they flower and become showy. Use the list of references that appears at the conclusion of this article to find information about the plants suited for inclusion in naturalized areas and meadow or prairies.

Many vendors are now selling small perennial flowering plants sometimes referred to as plugs. Plugs can be a relatively inexpensive method of benefiting from established plants without spending a lot of money on large potted plants. Plugs can provide almost “instant” color. Planted from plugs, most plants will flower during the planting year or first year following planting.

Plugs can be planted directly into the killed and mowed island beds and need to be watered to ensure establishment. Following planting, a thin, two-inch thick layer of a fine-textured organic mulch can hold soil moisture, guard against soil temperature extremes, and restrict weed seed germination and establishment. Some superintendents also apply a preemergence herbicide such as Preen (trifluralin) to reduce weed invasion.

CONCLUSION

Obviously, there are both benefits and risks associated with native or naturalized far rough areas. Also, it is important to realize that not every course is suited to the changes brought about by naturalizing. Before starting, be sure to think through the entire process and likely results.

Should you decide to go ahead, the results will probably be both interesting and surprising. Wildlife on the course, desirable and otherwise, may increase. Some golfers will be excited by the "new" look, while others will mourn the loss of the manicured past. You may even see your budget going farther as you expend fewer labor and financial resources. Personally, you may become interested in our natural heritage as you explore the realm and diversity afforded by native plants and the wildlife they attract. How could the editors of Webster's even consider golf courses when they defined naturalize as, "to adapt (a plant or animal) to an environment not native; acclimate?" While the editors may not have thought about it then, it is happening now, and when properly handled, the results can surely be exciting.

ACKNOWLEDGEMENT

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